INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY HYDERABAD

R&D SHOWCASE 2021

Assessment of varying Land Use change in different states using Geo-spatial techniques - A case study of Krishna river basin, India

ABSTRACTS

Why Study LULC?

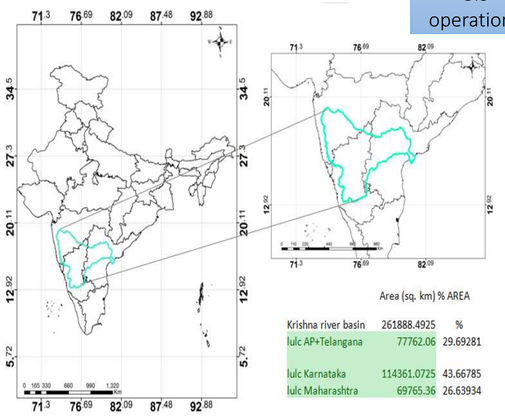
In last few decades with the advancement in geospatial technologies, it has become possible to understand & analyze complex real-world phenomena across space and time. With the increasing population, there is an ever-increasing demand for food, shelter and energy which results in varying changes in the land use and land cover pattern.

What's new?

- **Understanding variability –** analyzing LULC change at multiple scales i.e., at aggregate basin / watershed & at specific subset region i.e. state level & also at multiple time-intervals;
- **Role of drivers -** biophysical, climatic & socio-economic on LULC change (primarily agriculture since ~50% of area under farming);
- **Simulation & prediction of land use change**.

STUDY REGION

Krishna river basin comprises part of three states i.e., Karnataka (~44%), Maharashtra (~26%) & Andhra Pradesh including Telangana (~30%); Third largest river basin in India which is about ~8 (7.96) percent of the total geographic area of India.

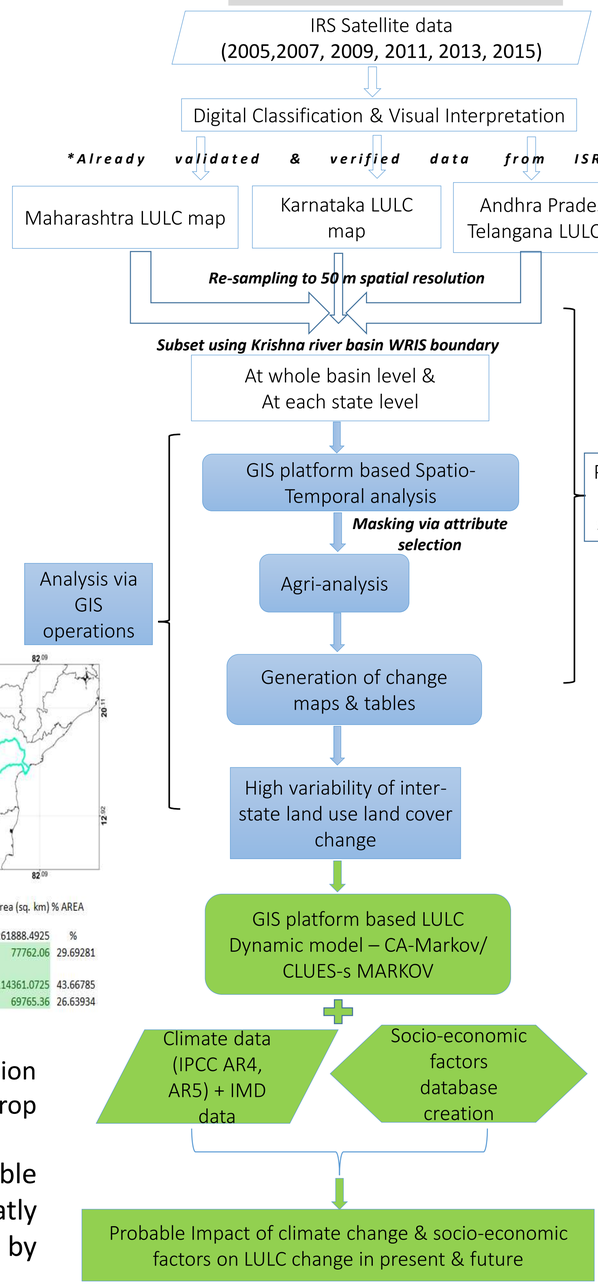


Krishna river basin	261888.4925	%
lulc AP+Telangana	77762.06	29.69281
lulc Karnataka	114361.0725	43.66785
lulc Maharashtra	69765.36	26.63934

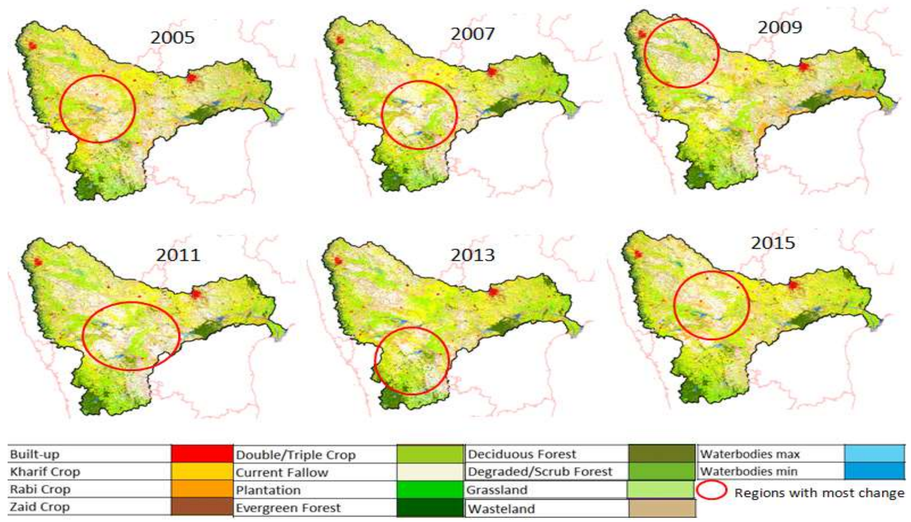
CONCLUSIONS

- **<u>Agriculture intensification</u>** - intra-annual & inter-seasonal fluctuation in cropping pattern (Kharif crops ↑19% to 24%), double/triple crop (↓14% to 17%), (Rabi crop ↓10% to 6%) & Zaid crop ↓-87%);
- Massive decline in large water bodies, urban expansion & stable forest cover; **<u>LULC change variation</u>** - across different scale greatly varies - each state has different drivers for this change, driven by state's policies, water availability & climate

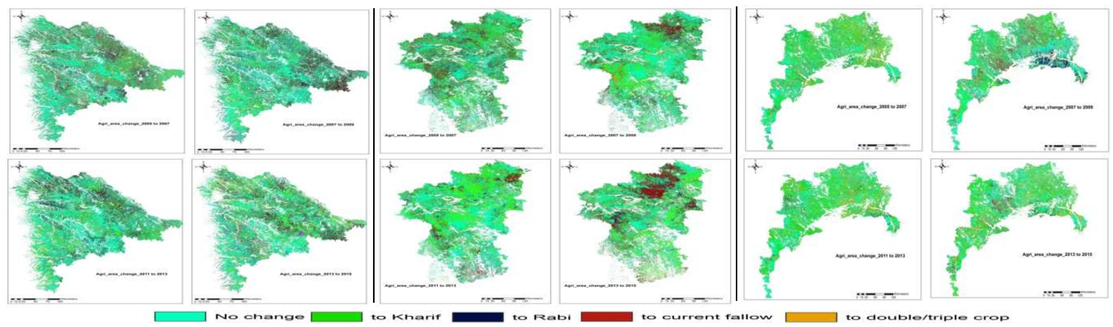
METHODOLOGY



RESULTS – (a) LULC yearly maps

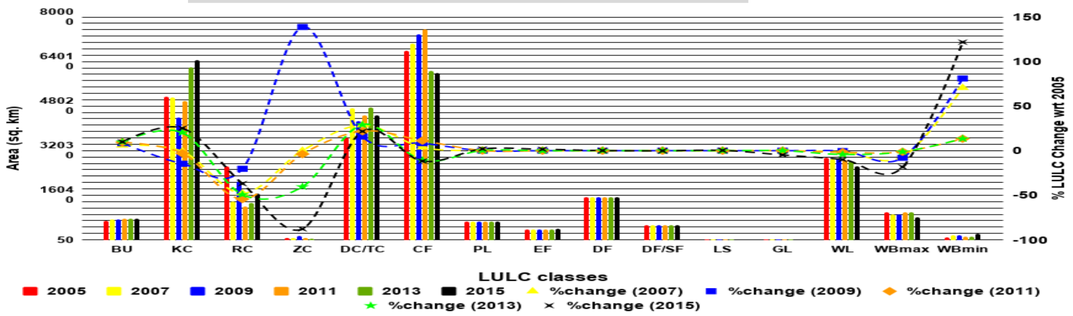


RESULTS – (b) STATE-WISE change maps



a).Maharashtra, b)Karnataka & c)Andhra Pradesh + Telangana

RESULTS – (c) LULC change trend



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